Commonwealth of Kentucky
Division for Air Quality

PERMIT APPLICATION SUMMARY FORM

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GENERAL INFORMATION:

Name:	A. O. Smith Electrical Products Company
Address:	636 Holt Drive, Scottsville, Kentucky 42164
Date application received:	July 15, 2003
SIC/Source description:	3621
EIS #:	21-003-00007
Application log number:	55876
Permit number:	V-03-044

APPLICATION TYPE/PERMIT ACTIVITY:

[ ] Initial issuance	[ ] General permit
[ ] Permit modification	[ ]Conditional major
__Administrative	[x] Title V
__Minor	[ ] Synthetic minor
__Significant	[x] Operating
[x] Permit renewal	[ ] Construction/operating

COMPLIANCE SUMMARY:

[ ] Source is out of compliance [ ] Compliance schedule included
[x] Compliance certification signed

APPLICABLE REQUIREMENTS LIST:

[ ] NSR	[ ] NSPS	[x] SIP
[ ] PSD	[ ] NESHAPS	[ ] Other
[ ] Netted out of PSD/NSR	[X] Not major modification per 401 KAR 51:017, 1(23)(b) or 51:052,1(14)(b)	

MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[ ] Source applied for federally enforceable emissions cap
[ ] Source provided terms for alternative operating scenarios
[x] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[x] Certified by responsible official
[x] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[ ] Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Actual (tpy)	Potential Emissions (tpy)
PM/PM_{10}	0.47	0.47
SO_2	0.03	0.03
NOx	6.15	6.15
CO	236.40	236.40
VOC	179.02	179.02
Glycol Ethers	47.64	47.64
Triethylamine	9.85	9.85
Formaldehyde	2.76	2.76

SOURCE DESCRIPTION:
The A. O. Smith Electrical Products Company supplies electric motors to customers in the "Hermetic Motor" compressor industry. The plant also acts as a "feeder plant" for components assembled at other company locations. Products shipped include finished rotor assemblies, finished stator/coil assemblies, and steel motor laminations.

Major manufacturing processes include:
1) stamping and heat-treating (annealing) of steel motor laminations,
2) aluminum die casting, machining, and heat-treating (bluing) of rotors, and
3) assembly/bonding, winding, and varnishing of stator cores.
In addition, the plant has an engineering sample shop to build and test new model designs specified by the engineering departments. New model designs are built in limited quantities and use the products manufactured in the facility as well as some purchased materials.

The manufacture of motor laminations consists of the slitting of semi-processed electrical grade steel and the stamping of stator and rotor laminations. Laminations used for stator cores are heat-treated by an annealing process. The annealing process is conducted in electric-fired furnaces in the presence of a reducing atmosphere. The reducing atmosphere is provided by "Exalene" Generators, which convert a natural gas supply into nitrogen (N_2), Carbon Monoxide (CO), Carbon Dioxide (CO_2), and Hydrogen (H_2). The actual composition of the Exalene Generator output gas is varied by controlling the input air-natural gas mixture.

The manufacture of rotor assemblies consists of stacking and aligning rotor laminations to a specific height, welding the outer diameter, coating the welded core, aluminum die casting the rotor core, boring and turning the cast core, heat-treating (bluing) the cast core, and cleaning, inspecting and packaging the finished rotor for shipment. The rotor heat-treatment process is conducted in electric-fired furnaces, utilizing atmosphere gas provided by "Exalene" Generators (see above description of Exalene Generator).

The manufacture of stator assemblies consists of stator core assembly, core bonding, wind and assembly of copper wire coils, varnish coat and curing of finished windings (Selectreat), and final inspection, packing and shipment of the finished stator assemblies. The primary air emissions from the stator assembly process are Volatile Organic Compounds (VOCs), Glycol Ethers, and natural gas combustion byproducts from bake ovens.

A. O. Smith Electrical Products Company is proposing renewal of their operating Title V permit that expired on January 15, 2004 with the following modifications:

1.Emissions Unit 03 (18), Mini Selectreat System

Equipments include: preheat oven, mix tank, trickle treat, cure oven, and bake ovens

As per the information provided by the source, this emission unit was shut down and removed from production in August 2002. Permit has been updated to reflect the changes.

2. Emissions Unit 05 (31), Rotor Grinding Process

Equipments include: Center less grinders, coolant feed rate, coolant filtration system, coolant re-circulation pump, and waste bin

As per the information provided by the source, this unit has been reclassified as an insignificant activity. Based on the current and future use of a non-HAP containing lubricant, all the potential emissions are below 5 tons/year.

3. Emissions Unit 08 (8 annealing furnances) and Emissions Unit 020 (Rotor blue furnances)

Earlier these units were classified as insignificant activities in the original Title V application submitted by General Electric (prior to A.O. Smith's acquisition of the facility). However, based on the potential carbon-monoxide (>100 tons/year) from the Exalene Generators associated with these furnances, these units have been reclassified and included more appropriately in the Title V permit.

Additionally, the company has reformulated the application solvent to eliminate formaldehyde and reduce yearly emission of glycol ether and the triethylamine.

EMISSION AND OPERATING CAPS DESCRIPTION:

Emissions Units: 01 (01) Stator Processes and 04 (23) Selectreat System #2

To qualify for the exemption from the provisions of 401 KAR 59:225, Section 3, the VOC content of the coating materials as applied shall be less than 3.5 lbs/gallon excluding water or exempt solvent or both as presented in Section 6(b) of the regulation on a 24-hour average basis.